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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,919	11/21/2003	Igor Timofeev	100318.00118	2393

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EXAMINER	
DINH, TRINH VO	

ART UNIT	PAPER NUMBER
2821	

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/718,919	TIMOFEEV ET AL.
	Examiner	Art Unit
	Trinh Vo Dinh	2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *amendment filed 08/12/2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-7,9-14,16-18,20,21,23 and 25-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1,2,4-7,9,20,21,23 and 29-31* is/are allowed.

6)☒ Claim(s) *10-14,16-18,25-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's communication filed on 08/12/2005 has been carefully considered by the examiner. In view of a further search, a new rejection is set forth below. This action is not made final.

Claim Objections

1. Claim 10 is objected to because of the following reason:

In claim 10, "each of the ground planes" should be changed to --the ground plane-- since only one ground plane for each antenna. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 10, 14, 16-18 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le et al (US 2005/0001778 of record) in view of Jonsson et al (US 6,295,028).

With respect to claim 10, Lee discloses, in Fig. 1, an antenna comprising a ground plane (12, paragraph [2206]) having an upper surface and an opposing lower surface, a plurality of dipoles (16) extending outwardly from the upper surface, a set of feedlines (30) disposed proximate the upper surface and coupled to the dipoles (14), a set of striplines (64 in Fig. 4) disposed upon the lower surface and coupled through the ground plane to the set of feedlines, and at least one sliding dielectric member (56) adjustably disposed proximate a portion of the set of striplines (64, 65) and adapted to shift a phase velocity of a signal communicating therepast to

the dipoles (claims 13-14 of Lee). However, Lee does not suggest the ground plane having bent edges. Jonsson discloses a ground plane (1 in Fig. 2 and col. 3, lines 34-35) adapted to control a lateral beam lobe of an antenna (Fig. 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Le's ground plane with bent edges as taught by Jonsson in order to achieve coinciding beam width (Jonsson: col. 4, lines 41-43).

With respect to claim 14, Le discloses a plurality of adjustment members (a shift rod) in claim 14 of Le), one said adjustment member being coupled to each of the sliding dielectric members (56) of each of the antennas (14), the adjustment members adapted to adjust a beamtilt of the respective antenna.

Respecting claim 16, Jonsson discloses the ground plane edges each have at least 2 bends (12a, 12c, 11a. 11b).

With respect to claims 17-18, Lee discloses the dipoles (14) are configured in sets (Fig. 3), each of the dipole sets having a single respective feedline (30) coupled thereto, and the antennas (14, 16) being physically coupled to one another along their respective bend edges (Fig. 1), but being electrically isolated from one another by an electrically non-conductive member (Fig. 1).

With respect to claim 25, Lee discloses comprising at least one cable (76) extending across the lower surface and coupled to the set of striplines.

4. Claims 11-13 and 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Le as modified by Jonsson in view of Darrel Helms (WO 97/06576 of record).

With respect to claim 11, Le as modified by Jonsson disclose every feature of the claimed invention except the respective ground planes of each antenna generally face inwardly towards

one another. Darrel discloses, in Fig. 4, each antenna (36) being coupled to another adjacent antenna (36) such that the dipoles of each antenna extend outwardly, and the respective ground planes (32a) of each antenna generally face inwardly towards one another. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ Darrel's arrangement to Le's antennas and ground planes in order to provide the antennas with smaller and narrower physical profiles.

With respect to claims 12-13, Le discloses the coupled antennas (360) collectively form a multi-sector antenna array extending 360°, and comprising 3 of the antennas, each of the antennas covering generally a 120° sector.

With respect to claim 28, Darrel discloses the antenna array (24) being configured as an omnidirectional antenna (page 6, line 8).

5. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le as modified by Jonsson and Darrel, and further in view of Tricoles et al (USP 3,761,937 of record).

With respect to claim 26, Le as modified by Jonsson and Darrel disclose every feature of the claimed invention except the radome including at least one metal portion thereon. Tricoles discloses the radome including at least one metal portion thereon (col. 1, lines 13-32). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make Darrel's radome from metal as taught by Tricoles in order to reduce the radar cross section of the aircraft (Tricoles: col. 1, lines 20+).

With respect to claim 27, Tricoles discloses metal portion (28) being an electrically conductive paint (col. 3, lines 1-5).

Allowable Subject Matter

6. Claims 1-2, 4-7, 9, 20-21, 23, 29-31 are presently allowed.

7. The cited art of record fails to teach the set of striplines have a plurality of serpentine portions each having a respective said dielectric member slidingly disposed thereupon as defined in claims 1 and 30, or a second ground plane disposed on the electrically non-conductive member and opposing the set of striplines as defined in claims 29 and 31.

Inquiry

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trinh Vo Dinh whose telephone number is (571) 272-1821. The examiner can normally be reached on Monday to Friday from 9:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art unit 2821

Trinh Vo Dinh
October 18, 2005